

REMARKS

A marked-up copy of the claims showing the changes made is included on page 7 and 8 of this response.

Claim 12, which was withdrawn from consideration by the examiner as being directed to a non-elected invention, has been canceled. Claim 1 has been amended to include the limitation of claim 10. Claim 10 has accordingly been canceled.

Claim 1 has been further amended to require that the amount of tackifier be from about 30 wt. % to about 60 wt. %. Support may be found in claim 8 as originally filed and examined.

Claims 1, 8 and 11 have been amended as suggested by the examiner. It is believed that the amendment overcomes the examiner's Section 112 rejection.

No new matter has been added. Entry requested.

Applicants have discovered hot melt adhesive formulations that can be applied at low temperatures (i.e., 200°F to 300°F) and that exhibit good heat stress values and cold tolerance are produced when using ethylene-vinyl acetate copolymers containing 30-50 wt. % of vinyl acetate and when using 30-60 wt % of a terpene phenolic tackifier. Applicants' claimed invention is not anticipated by the applied prior art of record and would not have been obvious to one skilled in this art.

Claims 1-11 stand finally rejected as being anticipated by, or in the alternative, as being obvious of Mehaffy *et al.* (U.S. Patent No. 6,117,945), Kosaka *et al.* (U.S. Patent No. 63,944,695), Bodouroglou *et al.* (U.S. Patent No. 4,960,295), or Liedermooy *et al.* (U.S. Patent No. 5,670,566),

Mehaffy et al. (U.S. Patent No. 6,117,945)

Mehaffy discloses low application temperature hot melt adhesives. Disclosed for use in the composition of Mehaffy is 5 to 25% of a compatible tackifier. While terpene phenolics are listed among the useful tackifiers, there is no disclosure or suggestion that would motivate one skilled in the art to select such a tackifier for use, let alone use it in an amount greater than taught by Mehaffy. Mehaffy fails to teach all the required claim limitations and, as such, cannot anticipate the claimed invention. Since there is not disclosure that would motivate the skilled artisan to use tackifiers in amount greater than 25 wt. %, the Mehaffy also fails to render the claimed invention obvious.

Withdrawal is requested.

Kosaka et al. (U.S. Patent No. 63,944,695)

Kosaka discloses a heat printing sheet comprising a substrate having coated thereon a composition comprising 10-60 % by weight of a tackifier, 5-50% by weight of a wax, 10-60% by weight of an ethylene vinyl acetate copolymer that contains 5-50% by weight vinyl acetate that has a melt index of 4-1000g/min, 5-40% filler and a pigment. The components are selected to be useful for the contemplated purpose and must contain a filler and a pigment. While Kosaka discloses and claims that the vinyl acetate component of the ethylene vinyl acetate copolymer have a melt index of 4-1000 g/10min, preferred for use is vinyl acetate having a melt index of 15-400g/min (col. 1, lines 61-63). The vinyl acetate in the exemplified embodiment (see example 1) has a melt index of 150g/min. Applicants' claimed hot melt adhesive composition is clearly not anticipated by Kosaka. Kosaka provides no suggestion to use the components claimed by applicants and fails to suggest the claimed invention.

Withdrawal is requested.

Bodourogloou et al. (U.S. Patent No. 4,960,295),

Bodourogloou discloses hot melt adhesive compositions containing a primer and a glue formulation. The primer is applied at a temperature of between about 310°F and about 360°F (col. 4, lines 6-7). The glue formulation is applied at a temperature of between about 335°F to about 365°F. Bodourogloou neither discloses nor suggests applicants' hot melt adhesive that is formulated for application at temperatures of 200°F - 300°F. Moreover, Bodourogloou teach use of phenolic modified terpene tackifiers in amounts of between about 3 and about 15% by weight. See col. 6, lines 62-63. Clearly applicants' claimed invention is not anticipated by Bodourogloou, and Bodourogloou provides no disclosure which would motivated the skilled artisan combine the components and amounts claimed by applicants.

Withdrawal is requested.

Liedermoooy et al. (U.S. Patent No. 5,670,566)

Liedermoooy disclose a hot melt adhesive composition that contains an ethylene n-butyl acrylate copolymer, a tackifying resin and a wax, and which may optionally contain up to 20% by weight of another polymeric additive, such as ethylene vinyl acetate containing 10-40% by weight vinyl acetate. There is no disclosure or suggestion that a low application temperature hot melt adhesive may be prepared using an ethylene vinyl acetate copolymer as claimed by applicants (5-60% EVA with 30-50% VA), let alone formulating a hot melt adhesive comprising 35 to 45 % by weight of an ethylene vinyl acetate copolymer that is preferred for used (see page 2, lines 22-24) and required for

used in claim 8 (35 % EVA with 40 % VA) and claim 11 (35-45% EVA with 30-50% VA).

Applicants submit that the claimed invention is not anticipated by Liedermooy. Liedermooy fails to disclose an ethylene-vinyl acetate based low application temperature hot melt adhesive containing a terpene phenolic tackifier, let alone use of the tackifier in amounts of 30 to 60 wt. %. Liedermooy provides no disclosure that would motivate the skilled artisan combine the components and amounts claimed by applicants.

Withdrawal is requested.

Conclusion

Applicants submit that the claimed subject matter represents an important and patentable contribution to the art. Favorable action and an early notification of allowance is solicited.

Respectfully submitted,



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Marked-up copy of claims showing changes made

Claim 1. A hot melt adhesive composition comprising, by weight of the hot melt adhesive composition,

- a) about 5 weight percent to about 60 weight percent of an [ethylene vinyl] ethylene-vinyl acetate copolymer having a vinyl acetate content of about 30 weight percent to 50 weight percent and a melt index of about 700 to 4,000 dg/min;
- b) about [5] 30 weight percent to about 60 weight percent of a terpene phenolic tackifier; and
- c) about 15 weight percent to about 55 weight percent of a wax with a melting point of about 125°F to 180°F;

wherein the hot melt composition can be applied at a temperature of 200°F to 300°F.

Claim 8. A hot melt adhesive composition comprising, by weight of the hot melt adhesive composition,

- a) about 35 weight percent of an [ethylene vinyl] ethylene-vinyl acetate copolymer with about 40 weight percent vinyl acetate and having a melt index of at about 1,000;
- b) about 30 weight percent of a terpene phenolic tackifier [selected from the group consisting of terpene, terpene phenolic, modified terpenes, and combinations thereof];

c) about 5 weight percent of at least one additional tackifier selected from the group consisting of pentaerythritol, hydrogenated glycerol, and combinations thereof;

d) about 30 weight percent of a wax with a melting point of about 150°F;

wherein the hot melt composition can be applied at a temperature of 200°F to 300°F.

Claim 11. An adhesive according to Claim 1 which comprises about 35 weight percent to about 45 weight percent of an [ethylene vinyl] ethylene-vinyl acetate copolymer.